

Table 2-1 POTENTIAL STAKEHOLDER PROJECTS FOR THE SANTA ANA REGION (8)
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	Watershed Management Area									
Project Type and Description	Anaheim Bay/ Huntington Harbour/ Bolsa Chica	Lower Santa Ana	Coyote Creek/Carbon Creek	Newport Bay	Newport Coast	Middle Santa Ana River	Chino Basin	Lake Elsinore/ San Jacinto	Upper Santa Ana River	Big Bear

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Table 2-1 POTENTIAL STAKEHOLDER PROJECTS FOR THE SANTA ANA REGION (8)
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	Watershed Management Area									
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Implement/teach Integrated Pest Management (IPM) practices.	X	X	X	X	X	X	X	X	X	X
Develop and/or implement pet waste / good housekeeping BMPs.	X	X	X	X	X	X	X	X	X	X
Develop and/or implement for fertilizer/ manure applications rates to cropland.	X	X	X	X	X	X	X	X	X	X
Deliver BMP and NPS MM education and outreach, focused on locally important NPS issues, to targeted audiences.	X	X	X	X	X	X	X	X	X	X
Develop BMPs for constructing and maintaining dirt roads and hiking/equestrian trails.	X	X	X	X	X	X	X	X	X	X
10.Groundwater Resource Protection										
Groundwater model for the entire Santa Ana Basin, as well as for each subbasin/ management zone.	X	X	X	X	X	X	X	X	X	X
Coordinate as many groundwater elevations /water quality data into one regional database.	X	X	X	X	X	X	X	X	X	X
Support Department of Water Resources update on Groundwater Basins of California, providing summary data on subbasins.	X	X	X	X	X	X	X	X	X	X
Plan effective uses of brownfields that protect groundwater quality.	X	X	X	X		X	X	X		
Solicit groundwater management plans for each subbasin. Canvass water districts, among other agencies. Develop groundwater management plans where none exist.	X	X	X	X	X	X	X	X	X	X
Develop and implement a regional groundwater monitoring program. Inventory of impacted drinking water supply wells throughout Region, with primary contaminants/ concentrations.	X	X	X	X	X	X	X	X	X	X
Support protection of groundwater recharge areas.	X	X	X	X		X	X	X	X	X
Support protection of groundwater sources including ephemeral streams, meadows, and vernal pools.	X	X	X	X	X	X	X	X	X	X
Plan and construct wellhead treatment facilities for removal of perchlorate from groundwater extracted by municipal supply wells.	X	X	X	X		X	X	X	X	X
Plan and construct desalters and related peripheral facilities.	X	X	X	X		X	X	X	X	X
Support for seawater intrusion barrier programs.	X	X		X	X					

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Support runoff treatment projects for Bolsa Chica Wetlands and East Garden Grove Wintersburg Channel. Monitor latter outlet to Huntington Harbour for metals, pathogens, toxicity.	X									
Provide high quality tidal and intertidal habitat at the Bolsa Chica wetlands, in coordination with the restoration steering committee.	X									
Increase biomass of pickleweed (<i>Salicornia</i> sp.) and cord grass (<i>Spartina foliosa</i>) in Upper Newport Bay and Anaheim Bay.	X									
Increase biomass of eelgrass (<i>Zostera marina</i>) in Huntington Harbour and other deep channels. Eelgrass shelters the halibut larval stage after pelagic spawning.	X									

B. Lower Santa Ana Watershed Management Area										
Studies of pathogen pathways from urbanization, aiding development of a pathogen TMDL.		X								
Build dry weather flow diversion structures that connect to treatment systems, “offline natural treatment systems,” or sewer. Build similar wet weather flow treatment systems.		X								
Evaluate as a reference site the watershed of Fremont Canyon, tributary to Santiago Creek in Orange County’s Santa Ana Mountains. It is among the few remaining relatively pristine watersheds in Orange County (<i>Nature Conservancy</i>).		X								
Restore, rehabilitate, preserve and maintain riparian buffers along the Santa Ana River and its tributaries.		X								
Support Santiago Creek habitat protection and enhancement programs.		X								
Efficiently supply surface water to recharge basins.		X								
Projects protecting Santa Ana Forebay groundwater recharge basins from nitrogen, TDS, and petroleum/ chlorinated hydrocarbons.		X								
Assess integrity of wetlands, estimate acreage, record and map them.		X								
Support open-space acquisitions and preservation in the Puente-Chino Hills, Santa Ana Canyon, and Santa Ana Mountains for riparian/watershed restoration and wildlife corridor movement.		X								
Studies of surface water and groundwater interactions between the Santa Ana Forebay and the Santa Ana Pressure Zone.		X								
Conduct outreach to cities to determine interest in developing subwatershed plans based on specific water quality concerns		X								

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C. Coyote Creek/ Carbon Creek Watershed Management Area										
Support San Gabriel River TMDLs as related to Coyote Creek and Carbon Creek. Given the eventual ocean discharge in Region 4, participate in installation of dry- and wet- weather flow diversion structures, to treatment systems, "offline natural treatment systems," or sewer. Build similar wet weather flow treatment systems.			X							
Monitor, control, and mitigate urban runoff and other impacts from development in the Puente-Chino Hills and Coyote Hills.			X							
Support open-space acquisitions and preservation in the Puente-Chino Hills and Coyote Hills, for riparian/ watershed restoration and wildlife corridor movement.			X							
Restore, enhance, and create wetlands/ waterways.			X							
Restore lost and degraded beneficial uses to Coyote and Carbon Creeks, including in-stream habitats, wetlands, native vegetation and bank stabilization, and nitrogen reduction. Support and develop management and restoration plans for the Coyote/ Carbon Creeks Watersheds.			X							

D. Newport Bay Watershed Management Area										
Perform model simulations for nutrients, algae, and oxygen in upper and lower Newport Bay (NB).				X						
Develop dissolved oxygen water quality objectives for NB.				X						
Implement BMPs to remove nitrogen and selenium from groundwater (as well as other sources) in the NB watershed, specifically one project in Peters Canyon Channel, a second in San Diego Creek Reach 2.				X						
Implement BMPs to remove nitrogen from agricultural sources in the NB watershed. Encourage agricultural and urban dischargers to implement control measures to reduce fecal coliform levels and to track the effectiveness of all these measures.				X						
Design and carry out an urban runoff fecal coliform source identification plan for the NB Fecal TMDL.				X						
Design and implement urban runoff fecal coliform source control measures for the NB Fecal TMDL.				X						
Design and carry out a natural fecal coliform sources identification plan for the NB Fecal TMDL.				X						

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Design and implement a natural fecal coliform source control plan for the NB Fecal TMDL.				X						
Conduct vessel waste studies (continue recent efforts, with the potential to add sites). Include sediment and barnacles and study ways to avoid jetting hulls while hulls are in the water.				X						
Conduct studies of vessel waste pumpout stations and conduct repair/ upgrade/ installations of stations in Newport Bay.				X						
Anadromous fish restoration (steelhead trout). GIS maps of fish migration blockages and deficiencies.				X						
Monitor Newport Dunes water quality, biota (macroinvertebrates) and sediment as part of Baywide program.				X						
Focus a project on comparisons of traditional pathogen indicator assays and human virus/ coliphage analyses.				X						
Install dry weather flow diversion structures and connect to treatment systems, "offline natural treatment systems," or sewer.				X						
Develop and implement management plans that specify practices to reduce sediment and chemical pollutant loadings from row crops, nurseries and/or citrus/avocado orchards.				X						
Design a study to evaluate potential pollutant loadings from agriculture in the Newport Bay watershed. Study would screen surface soils to assess current concentrations of organochlorine compounds, soil texture, and soil TOC as predictors of future pollutant loadings.				X						
Investigate bioaccumulation of organochlorine compounds and selenium in San Diego Creek and Upper/Lower Newport Bay at multiple trophic levels, and develop site-specific biota-sediment accumulation factors, through rigorous studies.				X						
Assess and model long-term impacts of Sediment TMDL, MS4 Permit and BMPs, and USACOE dredging on aggradation/degradation of Newport Bay (are we going from a sediment-heavy system to a sediment-starved system?) and beaches – both up-coast and down-coast as well as intra-bay impacts.				X						
Evaluate biodiversity and compliance with water quality standards in Upper Newport Bay Critical Coastal Area.				X						
Stream restoration projects throughout the watershed that stabilize embankments, or remove "armor" and restore embankments.				X						
Support Serrano Creek preservation, restoration, and revegetation.				X						

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Support Borrego Creek preservation, restoration, and revegetation.				X						
Use development of The Great Park, El Toro to leverage opportunities to "daylight" fully enclosed channels and to initiate restoration efforts on Agua Chinon and Bee Canyon channels.				X						
Create areas that support WILD and WARM beneficial use areas in The Great Park, El Toro.				X						
Implement NPS Management Measures for The Great Park, El Toro.				X						
Determine depth of pollution / contamination in the Rhine Channel. Assess remedial options for cleanup of the Rhine Channel to meet TMDLs.				X						
Assess ways to increase oxygen and circulation in the Rhine Channel.				X						
Biological and geochemical investigation of the UCI portion of the San Joaquin Marsh for selenium.				X						
Egg studies for presence of selenium and other bioaccumulative compounds in both the San Joaquin Marsh and Newport Bay areas. Target live eggs for non-threatened and endangered species. Target unhatched, nonviable eggs for threatened and endangered species such as the Brown Pelican, Least Tern, and Light-footed Clapper Rail.				X						
Identification and assessment of remedial options for selenium removal from groundwater and surface water in the Peters Canyon Wash area of San Diego Creek (original Swamp of the Frogs area).				X						
Natural Treatment System (NTS) Projects focused on best filtration of urban runoff, legacy contamination, and groundwater influence from the entire watershed.				X						
Increase biomass of pickleweed (<i>Salicornia</i> sp.) and cord grass (<i>Spartina foliosa</i>) in Upper Newport Bay and eelgrass (<i>Zostera marina</i>) in Lower Newport Bay. Eelgrass shelters/feeds the halibut larval stage after pelagic spawning.				X						
E. Newport Coast Watershed Management Area										
Conduct vessel waste studies (continue recent efforts, with the potential to add additional sites). Include sediment and barnacles and study ways to avoid jetting hulls while hulls are in the water.					X					
Studies determining effects of hydromodification outfalls to coast.					X					
Conduct studies prior to establishing any future vessel waste pumpout stations along the Newport Coast.					X					

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Projects that focus on comparisons of traditional pathogen indicator assays and human virus/ coliphage analyses.					X					
Build dry weather flow diversion structures that connect to treatment systems, “offline natural treatment systems,” or sewer. Build similar wet weather flow treatment systems.					X					
Help improve Crystal Cove Historic District Preservation and Public Use Plan as led by the California Department of Parks and Recreation.					X					
Coordinate monitoring with Newport Coast Planned Community to prevent wastewater from reaching Critical Coastal Areas (formerly ASBS sites). Ocean monitoring of benthic fauna and pelagic fish offshore of natural-drainage modification projects.					X					
Restoration program for Little Corona tide pools/biota.					X					
Restoration of drainages tributary to CCAs, to improve attainment of water quality standards.					X					
Assess and link water quality values to the different strata of a water body and determine how much of each strata meets water quality standards.					X					
Monitor toxics offshore in benthic fauna, including fish, and pelagic fish.					X					
Encourage/facilitate Orange County area urban dischargers to develop monitoring programs and evaluate sources of fecal coliform affecting REC1 beneficial use on beaches.					X					
Reduce total/fecal coliform to Buck Gully, Pelican Point Creek, Los Trancos (Crystal Cove Creek), and Muddy Creek (impaired REC1, REC2, and MUN due to urban runoff).					X					
Reduce health risks to marine life and bathers vis-à-vis Little Corona Water Improvement Project BMPs.					X					
Restore anadramous fish (steelhead trout) habitat.					X					
Conduct projects that protect the integrity of San Joaquin Hills natural drainages.					X					
Evaluate biodiversity and compliance with water quality standards in Newport Beach Marine Life Refuge Critical Coastal Area.					X					
Evaluate biodiversity and compliance with water quality standards in Irvine Coast Critical Coastal Area (shared project with Region 9).					X					

F. Middle Santa Ana River Watershed Management Area										
Restore, rehabilitate, preserve and maintain riparian buffers along the Santa Ana River (SAR) and its tributaries.						X				

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Maximize floodplain/ wildlife corridor swaths on both sides of SAR before pending urbanization claims all land, up to the active channel.						X				
Support San Timoteo Creek watershed management, riparian habitat, and channel restoration from Barton Road upstream.						X				
Remove <i>Arundo donax</i> and tamarisk along the Santa Ana River and its reaches and tributaries. Support and participate in Team Arundo.						X				
Projects to address WQ standards compliance and WQ impacts as a result of the October 2003 and May 2004 fires and subsequent rainy season debris flows.						X				
Connect Reche Canyon Mobile Home Park, Colton, to local sewer system, as well as existing businesses in Colton/Rialto/Fontana/ Bloomington.						X				
Report on current channelization of "Spring Brook", Market Street at Fairmont Park, Riverside. This creek is not concrete-lined where it discharges into Lake Evans, a tributary of the Santa Ana River.						X				
Remove concrete linings from flood control channels, such as sections of Temescal Creek (upstream of Prado wetlands) and San Sevaine Creek (from the foothills of the San Gabriel Mtns downstream). Another lined drain, Sunnyslope Drain (upstream from the Louis Rubidoux nature center) has spawning habitat for the endangered Santa Ana Sucker (<i>Catostomus santaanae</i>).						X				
Programs and coordination meetings focusing on Santa Ana Sucker restoration.						X				
Coordinate with USEPA on site-specific objectives for un-ionized ammonia.						X				
Provide desalters and related peripheral facilities, including pipelines, in groundwater subbasins impacted by excessive TDS concentrations resulting from historic land use practices.						X				
Provide wellhead treatment for removal of perchlorate in water produced by municipal supply wells.						X				
Support projects that protect/restore alluvial fan scrub						X				
Reduce TDS and nitrogen levels, particularly nitrate from agricultural and dairy use. Consolidate monitoring/ ag well data for TDS, nitrates, and pesticides in Riverside area GW subbasins. Coordinate recycled water recharge projects.						X				
Study pathogen pathways from urbanization, aiding development of a pathogen TMDL.						X				
Support efforts to protect habitat and provide open space for endangered and threatened species that have links to water quality standards, consistent with Multiple Species Habitat Conservation Plans.						X				

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G. Chino Basin Watershed Management Area										
Support Basin Studies developing multiple TMDLs for pathogens, nitrogen, etc.							X			
Identify and evaluate bacterial indicator and pathogen off-site transport mechanisms (and BMPs for their reduction) associated with agricultural operations.							X			
Perform field surveys to determine the sources of dry-weather urban nuisance runoff from Chino Basin sites							X			
Projects supporting Chino Basin Dairy Runoff Management Plan Optimum Management Plan and Organics Management Strategy Implementation.							X			
Projects supporting Chino Basin Integrated Ground and Surface Water Model (CIGSM), part of Chino Basin Water Resources Management Study.							X			
Nitrogen removal activities from consolidated basin drainage at Prado Lake Park and wetlands.							X			
Support measures to protect riparian habitats at Prado Wetlands.							X			

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